CLAIMS

We claim:

1. A method for forming a cargo moiety-cochleate comprising:

introducing a cargo moiety to a liposome in the presence of a solvent such that the cargo moiety associates with the liposome; and

precipitating the liposome to form a cargo moiety-cochleate.

2. The method of claim 1, comprising the step of introducing a solution of the solvent and the cargo moiety to an aqueous liposomal suspension.

3. The method of claim 2, wherein the solution is added by dropwise addition, continuous flow addition, or in a bolus.

4. The method of claim 1, comprising the step of introducing the cargo moiety to a liposomal suspension comprising the solvent.

5. The method of claim 4, wherein the cargo moiety introduced in the form of a powder or a liquid.

6. The method of claim 1, where an antioxidant is introduced to the liposomal suspension.

7. The method of claim 1, wherein the liposomal suspension comprises a plurality of unilamellar and multilamellar liposomes.

8. The method of claim 7, comprising the step of filtering or mechanically extruding through a small aperture the liposomal suspension such that a majority of the liposomes are unilamellar.

9. The method of claim 1, comprising precipitating the liposome with a multivalent cation to form a cargo moiety-cochleate.

10. The method of claim 1, wherein the solvent is a water miscible solvent.

11. The method of claim 1, wherein the solvent is at least one solvent selected from the group consisting of dimethylsulfoxide (DMSO), a methylpyrrolidone, N-methylpyrrolidone (NMP), acetonitrile, alcohol, ethanol, dimethylformamide (DMF), ethanol (EtOH), tetrahydrofuran (THF), and combinations thereof.

12. The method of claim 1, comprising the step of removing solvent from the liposome by dialysis and/or removing solvent from the cochleate by washing.

13. The method of claim 1, wherein the ratio of the lipid to the cargo moiety is between about 0.5:1 and about 20:1.

14. The method of claim 1, wherein the ratio of the lipid to the cargo moiety is between about 20:1 and about 20,000:1.

15. The method of claim 1, wherein the cargo moiety is hydrophobic or hydrophilic or hydrosoluble.

16. The method of claim 1, wherein the cargo moiety is amphipathic.

17. The method of claim 1, wherein the cargo moiety is an antifungal agent.

18. The method of claim 1, wherein the cargo moiety is at least one member selected from the group consisting of a vitamin, a mineral, a nutrient, a micronutrient, an amino acid, a toxin, a microbicide, a microbistat, a co-factor, an enzyme, a polypeptide, a polypeptide aggregate, a polynucleotide, a lipid, a carbohydrate, a nucleotide, a starch, a pigment, a fatty acid, a saturated fatty acid, a monounsaturated fatty acid, a polyunsaturated fatty acid, a flavoring, an essential oil or extract, a hormone, a cytokine, a virus, an organelle, a steroid or other multi-ring structure, a saccharide, a metal, a metabolic poison, an antigen, an imaging agent, a porphyrin, a tetrapyrrolic pigment, and a drug.

19. The method of claim 18, wherein the drug is at least one member selected

from the group consisting of a protein, a small peptide, a bioactive polynucleotide, an antibiotic, an antiviral, an anesthetic, antipsychotic, an anti-infectious, an antifungal, an anticancer, an immunosuppressant, an immunostimulant, a steroidal anti-inflammatory, a non-steroidal anti-inflammatory, an antioxidant, an antidepressant which can be synthetically or naturally derived, a substance which supports or enhances mental function or inhibits mental deterioration, an anticonvulsant, an HIV protease inhibitor, a non-nucleophilic reverse transcriptase inhibitor, a cytokine, a tranquilizer, a mucolytic agent, a dilator, a vasoconstrictor, a decongestant, a leukotriene inhibitor, an anti-cholinergic, an anti-histamine, a cholesterol lipid metablolism modulating agent and a vasodilatory agent.

20. The method of claim 18, wherein the drug is at least one member selected from the group consisting of Amphotericin B, acyclovir, adriamycin, carbamazepine, ivermectin, melphalen, nifedipine, indomethacin, curcumin, aspirin, ibuprofen, naproxen, acetaminophen, rofecoxib, diclofenac, ketoprofin, meloxicam, nabumetone, estrogens, testosterones, steroids, phenytoin, ergotamines, cannabinoids, rapamycin, propanadid, propofol, alphadione, echinomycin, miconazole, miconazole nitrate, ketoconazole, itraconazole, fluconazole, griseofulvin, clotrimazole, econazole, terconazole, butoconazole, oxiconazole, sulconazole, saperconazole, voriconazole, ciclopirox olamine, haloprogin, tolnaftate, naftifine, terbinafine hydrochloride, morpholine, flucytosine, natamycin, butenafine, undecylenic acid, Whitefield's ointment, propionic acid, caprylic acid, clioquinol, selenium sulfide, teniposide, hexamethylmelamine, taxol, taxotere, 18-hydroxydeoxycorticosterone, prednisolone, dexamethazone, cortisone, hydrocortisone, piroxicam, diazepam, verapamil, vancomycin, tobramycin, teicoplanin, bleomycin, peptidolglycan, ristocetin, sialoglycoproteins, orienticin, avaporcin, helevecardin, galacardin, actinoidin, gentamycin, netilmicin, amikacin, kanamycin A, kanamycin B, neomycin, paromomycin, neamine, streptomycin, dihydrostreptomycin, apramycin, ribostamycin, spectinomycin, caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, pneumocandin, geldanamycin, nystatin, rifampin, tyrphostin, a glucan synthesis inhibitor, vitamin A acid, mesalamine, risedronate, nitrofurantoin, dantrolene, etidronate, nicotine, amitriptyline,

clomipramine, citalopram, dothepin, doxepin, fluoxetine, imipramine, lofepramine, mirtazapine, nortriptyline, paroxetine, reboxitine, sertraline, trazodone, venlafaxine, dopamine, St. John's wort, phosphatidylserine, phosphatidic acid, amastatin, antipain, bestatin, benzamidine, chymostatin, 3,4-dichloroisocoumarin, elastatinal, leupeptin, pepstatin, 1,10-phenanthroline, phosphoramidon, ethosuximide, ethotoin, felbamate, fosphenytoin, lamotrigine, levitiracetam, mephenytoin, methsuximide, oxcarbazepine, phenobarbital, phensuximide, primidone, topirimate, trimethadione, zonisamide, saquinavir, ritonavir, indinavir, nelfinavir, and amprenavir.

21. The method of claim 18, wherein the polynucleotide is at least one member selected from the group consisting of a deoxyribonucletic acid (DNA) molecule, a ribonucleic acid (RNA) molecule, small interfering RNA (siRNA), a ribozyme, an antisense molecule, a morpholino and a plasmid.

22. The method of claim 21, wherein the DNA is transcribed to yield a ribonucleic acid.

23. The method of claim 22, wherein the ribonucleic acid is translated to yield a biologically active polypeptide.

24. The method of claim 18, wherein the polypeptide is at least one member selected from the group consisting of cyclosporin, Angiotensin I, II, or III, enkephalins and their analogs, ACTH, anti-inflammatory peptides I, II, or III, bradykinin, calcitonin, beta-endorphin, dinorphin, leucokinin, leutinizing hormone releasing hormone (LHRH), insulin, neurokinins, somatostatin, substance P, thyroid releasing hormone (TRH), and vasopressin.

25. The method of claim 18, wherein the antigen is at least one member selected from the group consisting of a membrane protein, a carbohydrate, envelope glycoproteins from viruses, an animal cell protein, a plant cell protein, a bacterial protein and a parasitic protein.

26. The method of claim 18, wherein the nutrient is at least one member selected from the group consisting of lycopene, vitamins, minerals, fatty acids, amino acids, fish oils, fish oil extracts, resveratrol, biotin, choline, inositol, ginko, saccharides, a phytochemical or zoochemical, beta-carotene, lutein, zeaxanthine, quercetin, silibinin, perillyl alcohol, genistein, sulfurophane, eicosapentanoic acid, gamma-3, omega-3, gamma 6 and omega-6 fatty acids.

27. The method of claim 18, wherein the vitamin is at least-one member selected from the group consisting of vitamins A, B, B1, B2, B3, B12, B6, B-complex, C, D, E, and K, vitamin precursors, caroteniods, and beta-carotene.

28. The method of claim 18, wherein the mineral is at least one member selected from the group consisting of boron, chromium, colloidal minerals, colloidal silver, copper, manganese, potassium, selenium, vanadium, vanadyl sulfate, calcium, magnesium, barium, iron and zinc.

29. The method of claim 18, wherein the saccharide or sweetener is at least one member selected from the group consisting of saccharine, isomalt, maltodextrine, aspartame, glucose, maltose, dextrose, fructose and sucrose.

30. The method of claim 18, wherein the flavor substance is an essential oil or an extract.

31. The method of claim 30, wherein the flavor substance is selected from the group consisting of oils and extracts of cinnamon, vanilla, almond, peppermint, spearmint, chamomile, geranium, ginger, grapefruit, hyssop, jasmine, lavender, lemon, lemongrass, marjoram, lime, nutmeg, orange, rosemary, sage, rose, thyme, anise, basil, black pepper and tea or tea extracts.

32. The method of claim 30, wherein the extract is from at least one member selected from the group consisting of an herb, a citrus, a spice and a seed.

33. The method of claim 1, further comprising introducing an aggregation inhibitor to the liposomes.

34. The method of claim 33, wherein the aggregation inhibitor is at least one aggregation inhibitor selected from the group of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

35. The method of claim 1, further comprising introducing an aggregation inhibitor to the cochleates.

36. The method of claim 35, wherein the aggregation inhibitor is at least one aggregation inhibitor selected from the group of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

37. A composition comprising one or more cochleates made by the method of any one of claims 1-36.

38. A method of treating a subject that can benefit from the administration of a cargo moiety, comprising the step of:

administering the composition of claim 37, such that the cargo moiety is administered to the subject such that the subject is benifited.

39. The method of treatment according to claim 38, wherein the administration is by a mucosal or a systemic route.

40. The method of treatment according to claim 39, wherein the administration is at least one mucosal route selected from the group consisting of oral, intranasal, intraocular, intrarectal, intravaginal, topical, buccal, and intrapulmonary.

41. The method of treatment according to claim 39, wherein the administration is by at least one systemic route selected from the group consisting of intravenous, intramuscular, intrathecal, subcutaneous, transdermal, and intradermal.

42. The method of claim 38, wherein the cargo moiety is administered to treat at least one disease or disorder selected from the group consisting of inflammation, pain, infection, fungal infection, bacterial infection, viral infection, parasitic disorders, an immune disorder, genetic disorders, degenerative disorders, cancer, proliferative disorders, obesity, depression, hair loss, impotence, hypertension, hypotension, dementia, senile dementia, malnutrition, acute and chronic leukemia and lymphoma, sarcoma, adenoma, carcinomas, epithelial cancers, small cell lung cancer, non-small cell lung cancer, prostate cancer, breast cancer, pancreatic cancer, hepatocellular carcinoma, renal cell carcinoma, biliary cancer, colorectal cancer, ovarian cancer, uterine cancer, melanoma, cervical cancer, testicular cancer, esophageal cancer, gastric cancer, mesothelioma, glioma, glioblastoma, pituitary adenomas, schizophrenia, obsessive compulsive disorder (OCD), bipolar disorder, Alzheimer's disease, Parkinson's disease, cell proliferative disorders, blood coagulation disorders, Dysfibrinogenaemia and hemophilia (A and B), autoimmune disorders, systemic lupus erythematosis, multiple sclerosis, myasthenia gravis, autoimmune hemolytic anemia, autoimmune thrombocytopenia, Grave's disease, allogenic transplant rejection, ankylosing spondylitis, psoriasis, scleroderma, uveitis, eczema, dermatological disorders, hyperlipidemia, hyperglycemia, hypercholesterolemia, cystic fibrosis, muscular dystrophy, headache, arthritis, rheumatoid arthritis, osteoarthritis, atherosclerosis, acute gout, acute or chronic soft tissue damage, asthma, chronic rhinosinusitis, allergic fungal sinusitis, sinus mycetoma, non-invasive fungus induced mucositis, non-invasive fungus induced intestinal mucositis, chronic otitis media, chronic colitis, inflammatory bowel diseases, ulcerative colitis, and Crohn's disease.

43. The method of claim 38, wherein the subject can benefit from administration of a nutrient and the cargo moiety is a nutrient.

44. An article of manufacture comprising packaging material and a lipid contained within the packaging material, wherein the packaging material comprises a label or package insert indicating the use of the lipid for forming cochleates or cochleate compositions of the invention.

45. The article of manufacture of claim 44, further comprising instructions or guidelines for the formation of cochleates or cochleate compositions of the invention.

46. The article of manufacture of claim 45, wherein one of the instructions involves mixing a cargo moiety with a solvent and dripping it into a solution of the lipids.

47. The article of manufacture of claim 44, further comprising a solvent.

48. The article of manufacture of claim 44, further comprising a cargo moiety.

49. The article of manufacture of claim 44, further comprising a multivalent cation.

50. The article of manufacture of claim 44, further comprising a control cargo moiety.

51. The article of manufacture of claim 44, further comprising a chelating agent.

52. The article of manufacture of claim 44, further comprising an aggregation inhibitor.

53. A composition comprising an anhydrous cochleate.

54. The composition of claim 53, wherein the cochleate comprises a negatively charged lipid, a protonized cargo moiety, and a divalent metal cation.

55. The composition of claim 54, wherein the protonized cargo moiety is water soluble.

56. The composition of claim 54, wherein the protonized cargo moiety is a protonized weakly basic cargo moiety.

57. The composition of claim 54, wherein the protonized cargo moiety is a multivalent cation.

58. The composition of claim 54, wherein the protonized cargo moiety is a protonized peptide.

59. The composition of claim 58, wherein the protonized cargo moiety is a protonized protein.

60. The composition of claim 54, wherein the protonized cargo moiety is a protonized nucleotide.

61. The composition of claim 60, wherein the protonized nucleotide is at least one member selected from the group consisting of a protonized DNA, a protonized RNA, a protonized morpholino, a protonized siRNA molecule, a protonized ribozyme, a protonized antisense molecule, and a protonized plasmid.

62. The composition of claim 54, wherein the protonized cargo moiety is an aminoglycoconjugate.

63. The composition of claim 54, wherein the protonized cargo moiety is a protonized aminoglycoside or a protonized aminoglycopeptide.

64. The composition of claim 63, wherein the protonized cargo moiety is at least one member selected from the group consisting of protonized vancomycin, teicoplanin, bleomycin, peptidolglycan, ristocetin, sialoglycoproteins, orienticin, avaporcin, helevecardin, galacardin, actinoidin, gentamycin, netilmicin, tobramycin, amikacin, kanamycin A, kanamycin B, neomycin, paromomycin, neamine, streptomycin, dihydrostreptomycin, apramycin, ribostamycin, spectinomycin, and combinations thereof.

65. The composition of claim 54, wherein the protonized cargo moiety is a protonized echinocandin.

66. The composition of claim 65, wherein the protonized cargo moiety is at least one member selected from the group consisting of protonized caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, pneumocandin and combinations thereof.

67. The composition of claim 54, wherein the ratio of protonized cargo moiety to lipid is about 2:1 by weight.

68. The composition of claim 54, wherein the ratio of protonized cargo moiety to lipid is between about 4:1 and about 10:1 by weight.

69. The composition of claim 53, further comprising a second protonized cargo moiety.

70. The composition of claim 53, further comprising a cargo moiety.

71. The composition of claim 70, wherein the cargo moiety is a nutrient.

72. The composition of claim 71, wherein the nutrient is Vitamin E.

73. The composition of claim 54, wherein the divalent metal cation is barium or calcium.

74. The composition of claim 53, further comprising an aggregation inhibitor.

75. The composition of claim 74, wherein the aggregation inhibitor comprises at least one aggregation inhibitor selected from the group consisting of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

76. The composition of claim 54, wherein the lipid comprises a phospholipid.

77. The composition of claim 54, wherein the lipid comprises at least one phospholipid selected from the group consisting of a dioleoylphosphatidylserine (DOPS) and a phosphatidylserine (PS).

78. A pharmaceutical composition comprising the composition of any of claims 53-77 and a pharmaceutically acceptable carrier.

79. A method for forming an anhydrous cochleate comprising the step of contacting a negatively charged lipid, a protonized cargo moiety and a divalent metal cation, such that a cochleate is formed.

80. The method of claim 79, comprising the step of acidifying a cargo moiety to form a protonized cargo moiety.

81. The method of claim 79, comprising the step of adjusting the pH of a solution of the cochleate to maintain a protonized cargo moiety.

82. The method of claim 79, wherein the protonized cargo moiety is water soluble cargo moiety.

83. The method of claim 79, wherein the protonized cargo moiety is a protonized weakly basic cargo moiety.

84. The method of claim 79, wherein the protonized cargo moiety is a multivalent cation.

85. The method of claim 79, wherein the protonized cargo moiety is a protonized peptide.

86. The method of claim 85, wherein the protonized cargo moiety is a protonized protein.

87. The method of claim 79, wherein the protonized cargo moiety is a protonized nucleotide.

88. The method of claim 87, wherein the protonized nucleotide is selected from the group consisting of a protonized DNA, a protonized RNA, a protonized morpholino, a protonized siRNA molecule, a protonized ribozyme, a protonized antisense molecule, and a protonized plasmid.

89. The method of claim 79, wherein the protonized cargo moiety is a protonized aminoglycoconjugate.

90. The method of claim 79, wherein the protonized cargo moiety is a protonized aminoglycoside or a protonized aminoglycopeptide.

91. The method of claim 90, wherein the protonized cargo moiety is selected from the group consisting of protonized vancomycin, teicoplanin, bleomycin, peptidolglycan, ristocetin, sialoglycoproteins, orienticin, avaporcin, helevecardin, galacardin, actinoidin, gentamycin, netilmicin, tobramycin, amikacin, kanamycin A, kanamycin B, neomycin, paromomycin, neamine, streptomycin, dihydrostreptomycin, apramycin, ribostamycin, spectinomycin, and combinations thereof.

92. The method of claim 79, wherein the protonized cargo moiety is a protonized echinocandin.

93. The method of claim 92, wherein the protonized cargo moiety is selected from the group consisting of protonized caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, pneumocandin and combinations thereof.

94. The method of claim 79, wherein the ratio of protonized cargo moiety to lipid is about 2:1 by weight.

95. The method of claim 79, wherein the ratio of protonized cargo moiety to lipid is between about 4:1 and about 10:1 by weight.

96. The method of claim 79, wherein the cochleate further comprises a cargo moiety.

97. The method of claim 96, wherein the cargo moiety is at least one member selected from the group consisting of a vitamin, a mineral, a nutrient, a micronutrient, an amino acid, a toxin, a microbicide, a microbistat, a co-factor, an enzyme, a polypeptide, a polypeptide aggregate, a polynucleotide, a lipid, a carbohydrate, a nucleotide, a starch, a pigment, a fatty acid, a monounsaturated fatty acid, a polyunsaturated fatty acid, a flavored essential oil or extract, a hormone, a cytokine, a virus, an organelle, a steroid or other multi-ring structure, a saccharide, a metal, a metabolic poison, an antigen, an imaging agent, a porphyrin, a tetrapyrrolic pigment, and a drug.

98. The method of claim 96, wherein the cargo moiety is a nutrient.

99. The method of claim 98, wherein the nutrient is Vitamin E.

100. The method of claim 79, wherein the cochleate further comprises a second protonized cargo moiety.

101. The method of claim 79, wherein the divalent metal cation is barium or calcium.

102. The method of claim 79, further comprising introducing an aggregation inhibitor to the cochleate.

103. The method of claim 102, wherein the aggregation inhibitor is introduced to the cochleate before and after the cochleate is formed.

104. The method of claim 103, wherein the aggregation inhibitor comprises casein and methylcellulose, and the casein is introduced before the cochleate is formed and the methylcellulose is introduced after the cochleate is formed.

105. The method of claim 79, wherein the lipid comprises a phospholipid.

106. A method for treating a bacterial infection in a host comprising the step of administering the composition of claim 53 to a host such that the bacterial infection is treated.

107. The method of claim 106, wherein the host of the bacterial infection is a cell, a tissue or an organ.

108. A method for treating a fungal infection in a host comprising the step of administering the composition of claim 53 to a host such that the fungal infection is treated.

109. The method of claim 108, wherein the host of the fungal infection is a cell, a tissue or an organ.

110. A method of treating a subject that can benefit from the administration of a protonized cargo moiety, comprising the step of:

administering the composition of claim 53 comprising a protonized cargo moiety, such that the protonized cargo moiety is administered to the subject and such that the subject is benefited.

111. The method of claim 110, wherein the administration is by a mucosal or a systemic route.

112. The method of treatment according to claim 111, wherein the administration is by at least one mucosal route selected from the group consisting of oral, intranasal, intraocular, intrarectally, intravaginal, topical, buccal and intrapulmonary.

113. The method of treatment according to claim 111, wherein the administration is by at least one systemic route selected from the group consisting of intravenous, intramuscular, intrathecal, subcutaneous, transdermal and intradermal.

114. The method of claim 110, wherein the composition is administered to treat at least one disease or disorder selected from the group consisting of inflammation, pain, infection, fungal infection, bacterial infection, viral infection, parasitic disorders, an immune disorder, genetic disorders, degenerative disorders, cancer, diabetes, insomnia, proliferative disorders, obesity, depression, hair loss, impotence, hypertension, hypotension, dementia, senile dementia, malnutrition, acute and chronic leukemia and lymphoma, sarcoma, adenoma, carcinomas, epithelial cancers, small cell lung cancer, non-small cell lung cancer, prostate cancer, breast cancer, pancreatic cancer, hepatocellular carcinoma, renal cell carcinoma, biliary cancer, colorectal cancer, ovarian cancer, uterine cancer, melanoma, cervical cancer, testicular cancer, esophageal cancer, gastric cancer, mesothelioma, glioma, glioblastoma, pituitary adenomas, schizophrenia, obsessive compulsive disorder (OCD), bipolar disorder, Alzheimer's disease, Parkinson's disease, cell proliferative disorders, blood coagulation disorders, Dysfibrinogenaemia and hemophilia (A and B), autoimmune disorders, systemic lupus erythematosis, multiple sclerosis, myasthenia gravis, autoimmune hemolytic anemia, autoimmune thrombocytopenia, Grave's disease, allogenic transplant rejection, ankylosing spondylitis, psoriasis, scleroderma, uveitis, eczema, dermatological disorders, hyperlipidemia, hyperglycemia, hypercholesterolemia, cystic fibrosis, muscular dystrophy, headache, arthritis, rheumatoid arthritis, osteoarthritis, atherosclerosis, acute gout, acute or chronic soft tissue damage, asthma, chronic rhinosinusitis, allergic fungal sinusitis, sinus mycetoma, non-invasive fungus induced mucositis, non-invasive fungus induced intestinal mucositis, chronic otitis media, chronic colitis, inflammatory bowel diseases, ulcerative colitis, and Crohn's disease.

115. A cochleate composition comprising:

a plurality of cochleates; and

an aggregation inhibitor.

116. The composition of claim 115, further comprising a cargo moiety.

117. The composition of claim 115, wherein the aggregation inhibitor coats the cochleate.

118. The composition of claim 115, wherein the aggregation inhibitor is at least one aggregation inhibitor selected from the group consisting of a protein, a peptide, a polysaccharide, a milk or milk product, a polymer, a gum, a wax and a resin.

119. The composition of claim 115, wherein the aggregation inhibitor comprises at least one aggregation inhibitor selected from the group consisting of: casein, κ-casein, milk, albumin, serum albumin, bovine serum albumin, rabbit serum albumin, methylcellulose, ethylcellulose, propylcellulose, hydroxycellulose, hydroxymethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, hydroxypropylmethyl cellulose, polyvinyl pyrrolidone, carboxymethyl cellulose, carboxyethyl cellulose, pullulan, polyvinyl alcohol, sodium alginate, polyethylene glycol, polyethylene oxide, xanthan gum, tragacanth gum, guar gum, acacia gum, arabic gum, polyacrylic acid, methylmethacrylate copolymer, carboxyvinyl polymer, amylose, high amylose starch, hydroxypropylated high amylose starch, dextrin, pectin, chitin, chitosan, levan, elsinan, collagen, gelatin, zein, gluten, carrageenan, carnauba wax, shellac, latex polymers, milk protein isolate, soy protein isolate, and whey protein isolate.

120. The composition of claim 115, wherein the aggregation inhibitor comprises at least one aggregation inhibitor selected from the group consisting of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

121. The composition of claim 115, wherein the plurality of cochleates has a mean diameter of less than about 600 nm.

122. The composition of any one of claim 115, wherein the plurality of cochleates has a mean diameter of less than about 500 nm.

123. The composition of any one of claim 115, wherein the size distribution of the plurality of cochleates is less than about 700 nm.

124. The composition of any one of claim 115, wherein the size distribution of the plurality of cochleates is less than about 550 nm.

125. The composition of claim 116, wherein the cargo moiety is at least one member selected from the group consisting of a vitamin, a mineral, a nutrient, a micronutrient, an amino acid, a toxin, a microbicide, a microbistat, a co-factor, an enzyme, a polypeptide, a polypeptide aggregate, a polynucleotide, a lipid, a carbohydrate, a nucleotide, a starch, a pigment, a fatty acid, a monounsaturated fatty acid, a polyunsaturated fatty acid, a saturated fatty acid, a flavored essential oil or extract, a hormone, a cytokine, a virus, an organelle, a steroid or other multi-ring structure, a saccharide, a metal, a metabolic poison, an antigen, an imaging agent, a porphyrin, a tetrapyrrolic pigment, and a drug.

126. The composition of claim 125, wherein the drug is at least one member selected from the group consisting of a protein, a small peptide, a bioactive polynucleotide, an antibiotic, an antiviral, an anesthetic, antipsychotic, an anti-infectious, an antifungal, an anticancer, an immunosuppressant, an immunostimulant, a steroidal anti-inflammatory, a non-steroidal anti-inflammatory, an antioxidant, an antidepressant which can be synthetically or naturally derived, a substance which supports or enhances mental function or inhibits mental deterioration, an anticonvulsant, an HIV protease inhibitor, a non-nucleophilic reverse transcriptase inhibitor, a cytokine, a tranquilizer, a mucolytic agent, a dilator, a vasoconstrictor, a decongestant, a leukotriene inhibitor, an anti-cholinergic, an anti-histamine, a cholesterol lipid metablolism modulating agent and a vasodilatory agent.

127. The composition of claim 126, wherein the drug is at least one member selected from the group consisting of Amphotericin B, acyclovir, adriamycin, carbamazepine, ivermectin, melphalen, nifedipine, indomethacin, curcumin, aspirin, ibuprofen, naproxen, acetaminophen, rofecoxib, diclofenac, ketoprofin,

meloxicam, nabumetone, estrogens, testosterones, steroids, phenytoin, ergotamines, cannabinoids, rapamycin, propanadid, propofol, alphadione, echinomycin, miconazole, miconazole nitrate, ketoconazole, itraconazole, fluconazole, griseofulvin, clotrimazole, econazole, terconazole, butoconazole, oxiconazole, sulconazole, saperconazole, voriconazole, ciclopirox olamine, haloprogin, tolnaftate, naftifine, terbinafine hydrochloride, morpholines, flucytosine, natamycin, butenafine, undecylenic acid, Whitefield's ointment, propionic acid, caprylic acid, clioquinol, selenium sulfide, teniposide, hexamethylmelamine, taxol, taxotere, 18-hydroxydeoxycorticosterone, prednisolone, dexamethazone, cortisone, hydrocortisone, piroxicam, diazepam, verapamil, vancomycin, tobramycin, teicoplanin, bleomycin, peptidolglycan, ristocetin, sialoglycoproteins, orienticin, avaporcin, helevecardin, galacardin, actinoidin, gentamycin, netilmicin, amikacin, kanamycin A, kanamycin B, neomycin, paromomycin, neamine, streptomycin, dihydrostreptomycin, apramycin, ribostamycin, spectinomycin, caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, pneumocandin, geldanamycin, nystatin, rifampin, tyrphostin, a glucan synthesis inhibitor, vitamin A acid, mesalamine, risedronate, nitrofurantoin, dantrolene, etidronate, nicotine, amitriptyline, clomipramine, citalopram, dothepin, doxepin, fluoxetine, imipramine, lofepramine, mirtazapine, nortriptyline, paroxetine, reboxitine, sertraline, trazodone, venlafaxine, dopamine, St. John's wort, phosphatidylserine, phosphatidic acid, amastatin, antipain, bestatin, benzamidine, chymostatin, 3,4-dichloroisocoumarin, elastatinal, leupeptin, pepstatin, 1,10-phenanthroline, phosphoramidon, ethosuximide, ethotoin, felbamate, fosphenytoin, lamotrigine, levitiracetam, mephenytoin, methsuximide, oxcarbazepine, phenobarbital, phensuximide, primidone, topirimate, trimethadione, zonisamide, saquinavir, ritonavir, indinavir, nelfinavir, and amprenavir.

128. The composition of claim 125, wherein the polynucleotide is at least one member selected from the group consisting of a deoxyribonucleic acid (DNA) molecule, a ribonucleic acid (RNA) molecule, a small interfering RNA (siRNA) molecule, a ribozyme, an antisense molecule, and a plasmid.

129. The composition of claim 128, wherein the DNA is transcribed to yield a ribonucleic acid.

130. The composition of claim 129, wherein the ribonucleic acid is translated to yield a biologically active polypeptide.

131. The composition of claim 125, wherein the polypeptide is at least one member selected from the group consisting of cyclosporin, Angiotensin I, II, or III, enkephalins and their analogs, ACTH, anti-inflammatory peptides I, II, or III, bradykinin, calcitonin, beta-endorphin, dinorphin, leucokinin, leutinizing hormone releasing hormone (LHRH), insulin, neurokinins, somatostatin, substance P, thyroid releasing hormone (TRH), and vasopressin.

132. The composition of claim 125, wherein the antigen is at least one member selected from the group consisting of a carbohydrate, envelope glycoproteins from viruses, an animal cell membrane protein, a plant cell membrane protein, a bacterial membrane protein and a parasitic membrane protein.

133. The composition of claim 125, wherein the nutrient is at least one member selected from the group consisting of micronutrients, vitamins, minerals, fatty acids, polyunsaturated fatty acids, amino acids, fish oils, fish oil extracts, biotin, choline, inositol, ginkgo, and saccharides.

134. The composition of claim 125, wherein the micronutrient is a phytochemical or a zoochemical.

135. The composition of claim 125, wherein the micronutrient is at least one member selected from the group consisting of beta-carotene, resveratrol, lutein, zeaxanthine, quercetin, silibinin, perillyl alcohol, genistein, sulfurophane, lycopene, eicosapentanoic acid, gamma-3, omega-3, gamma-6, and omega-6 fatty acids.

136. The composition of claim 125, wherein the vitamin is at least-one member selected from the group consisting of vitamins A, B, B1, B2, B3, B12, B6, B-complex, C, D, E, and K, vitamin precursors, carotenoids and beta-carotene.

137. The composition of claim 125, wherein the mineral is at least one member selected from the group consisting of boron, chromium, colloidal minerals, colloidal silver, copper, manganese, potassium, selenium, vanadium, vanadyl sulfate, calcium, magnesium, barium, iron and zinc.

138. The composition of claim 125, wherein the saccharide or sweetener is at least one member selected from the group consisting of saccharine, isomalt, maltodextrine, aspartame, glucose, maltose, dextrose, fructose and sucrose.

139. The composition of claim 125, wherein the flavor substance an essential oil or extract.

140. The composition of claim 139, wherein the flavor substance is at least one member selected from the group consisting of oils and extracts of cinnamon, vanilla, almond, peppermint, spearmint, chamomile, geranium, ginger, grapefruit, hyssop, lavender, lemon, lemongrass, marjoram, lime, nutmeg, orange, rosemary, sage, rose, thyme, anise, basil, and black pepper.

141. The composition of claim 139, wherein the extracts are from at least one member selected from the group consisting of an herb, a citrus, a spice and a seed.

142. The composition of claim 125, wherein the cochleate further comprises an antifungal drug.

143. The composition of claim 142, wherein the antifungal drug is at least one member selected from the group consisting of Amphotericin B, miconazole nitrate, ketoconazole, itraconazole, fluconazole, griseofulvin, clotrimazole, econazole, terconazole, butoconazole, oxiconazole, sulconazole, saperconazole, voriconazole, ciclopirox olamine, haloprogin, tolnaftate, naftifine, terbinafine hydrochloride,

morpholines, flucytosine, natamycin, butenafine, undecylenic acid, Whitefield's ointment, propionic acid, caprylic acid, clioquinol, nystatin, selenium sulfide, caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, and pneumocandin.

144. The composition of claim 142, wherein the aggregation inhibitor comprises at least one aggregation inhibitor selected from the group consisting of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

145. The composition of claim 142, wherein the antifungal is Amphotericin B and the aggregation inhibitor comprises methylcellulose.

146. The composition of claim 142, wherein the composition is in the form of a nasal spray.

147. A cochleate composition comprising a first plurality of cochleates with a first mean particle size and a second plurality of cochleates with a second mean particle size, wherein the second mean particle size is different from the first mean particle size.

148. The composition of claim 147, further comprising at least one cargo moiety.

149. The composition of claim 147, wherein the first plurality of cochleates and the second plurality of cochleates comprise the same cargo moiety.

150. The composition of claim 147, wherein the first plurality of cochleates contains a different cargo moiety than the second plurality of cochleates.

151. The composition of claim 147, further comprising a third plurality of cochleates with a third mean particle size, wherein the third mean particle size is different from both the first and the second mean particle sizes.

152. The composition of claim 151, further comprising a cargo moiety.

153. A cochleate comprising an aggregation inhibitor.

154. A pharmaceutical composition comprising the cochleate or cochleate composition of claim 115 and a pharmaceutically acceptable carrier.

155. A method of treating a subject that can benefit from the administration of a cargo moiety, comprising the step of:

administering the cochleate composition of claim 116, such that the cargo moiety is administered to the subject such that the subject is benefited.

156. The method of treatment according to claim 155, wherein the aggregation inhibitor comprises at least one aggregation inhibitor selected from the group consisting of casein, methylcellulose, albumin, serum albumin, bovine serum albumin and rabbit serum albumin.

157. The method of treatment according to claim 155, wherein the administration is by a mucosal or a systemic route.

158. The method of treatment according to claim 155, wherein the cochleate composition is delivered in a form selected from the group consisting of a solid, a capsule, a cachet, a pill, a tablet, a gelcap, a crystalline substance, a lozenge, a powder, a granule, a dragee, an electuary, a pastille, a pessary, a tampon, a suppository, a patch, a gel, a paste, an ointment, a salve, a cream, a foam, a lotion, a partial liquid, an elixir, a mouth wash, a syrup, a spray, a nebulae, a mist, an atomized vapor, an irrigant, an aerosol, a tincture, a wash, an inhalant, a solution or a suspension in an aqueous or non-aqueous liquid, and an oil-in-water or water-in-oil liquid emulsion.

159. The method of treatment according to claim 155, wherein the administration is a mucosal route selected from the group consisting of oral, intranasal, intraocular, intrarectal, intravaginal, topical, buccal and intrapulmonary.

160. The method of treatment according to claim 155, wherein the administration is intranasal.

161. The method of treatment according to claim 160, wherein the cochleate composition is delivered in a form selected from the group consisting of a spray, a nebulae, a mist, an atomized vapor, an irrigant, an aerosol, a wash, and an inhalant.

162. The method of treatment according to claim 160, wherein the cochleate composition comprises an antifungal drug.

163. The method of treatment according to claim 160, wherein the cochleate composition comprises at least one antifungal drug selected from the group consisting of Amphotericin B, miconazole nitrate, ketoconazole, itraconazole, fluconazole, griseofulvin, clotrimazole, econazole, terconazole, butoconazole, oxiconazole, sulconazole, saperconazole, voriconazole, ciclopirox olamine, haloprogin, tolnaftate, naftifine, terbinafine hydrochloride, morpholines, flucytosine, natamycin, butenafine, undecylenic acid, Whitefield's ointment, propionic acid, caprylic acid, clioquinol, nystatin, selenium sulfide, caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, and pneumocandin.

164. The method of treatment according to claim 155, wherein the aggregation inhibitor comprises methylcellulose, the cargo moiety is Amphotericin B, and the cochleate composition is delivered in the form of a nasal spray.

165. The method of claim 164, wherein the cochleate composition is used to treat rhinosinusitis

166. The method of treatment according to claim 155, wherein the administration is by a systemic route selected from the group consisting of intravenous, intramuscular, intrathecal, subcutaneous, transdermal and intradermal.

167. The method of claim 155, wherein the cargo moiety is administered to treat at least one disease or disorder selected from the group consisting of inflammation, pain, infection, fungal infection, bacterial infection, viral infection, parasitic disorders, an immune disorder, genetic disorders, degenerative disorders, cancer, diabetes, insomnia, proliferative disorders, obesity, depression, hair loss, impotence, hypertension, hypotension, dementia, senile dementia, malnutrition, acute and chronic leukemia and lymphoma, sarcoma, adenoma, carcinomas, epithelial cancers, small cell lung cancer, non-small cell lung cancer, prostate cancer, breast cancer, pancreatic cancer, hepatocellular carcinoma, renal cell carcinoma, biliary cancer, colorectal cancer, ovarian cancer, uterine cancer, melanoma, cervical cancer, testicular cancer, esophageal cancer, gastric cancer, mesothelioma, glioma, glioblastoma, pituitary adenomas, schizophrenia, obsessive compulsive disorder (OCD), bipolar disorder, Alzheimer's disease, Parkinson's disease, cell proliferative disorders, blood coagulation disorders, Dysfibrinogenaemia and hemophilia (A and B), autoimmune disorders, systemic lupus erythematosis, multiple sclerosis, myasthenia gravis, autoimmune hemolytic anemia, autoimmune thrombocytopenia, Grave's disease, allogenic transplant rejection, ankylosing spondylitis, psoriasis, scleroderma, uveitis, eczema, dermatological disorders, hyperlipidemia, hyperglycemia, hypercholesterolemia, cystic fibrosis, muscular dystrophy, headache, arthritis, rheumatoid arthritis, osteoarthritis, atherosclerosis, acute gout, acute or chronic soft tissue damage, asthma, chronic rhinosinusitis, allergic fungal sinusitis, sinus mycetoma, non-invasive fungus induced mucositis, non-invasive fungus induced intestinal mucositis, chronic otitis media, chronic colitis, inflammatory bowel diseases, ulcerative colitis, and Crohn's disease.

168. The method of claim 155, wherein the subject can benefit from administration of a nutrient and the cargo moiety is a nutrient.

169. A method of making a cochleate composition comprising the step of: introducing an aggregation inhibitor to a cochleate composition.

170. The method of claim 169, comprising the step of introducing the aggregation inhibitor to a composition of cochleates.

171. The method of claim 169, comprising the step of introducing the aggregation inhibitor to a composition of aggregated cochleates.

172. The method of claim 169, comprising the steps of:
introducing the aggregation inhibitor to a composition of liposomes; and
inducing formation of the cochleate composition.

173. The method of claim 169, comprising the steps of:
introducing the aggregation inhibitor to a solution of lipids;
forming a liposomes; and
inducing formation of the cochleate composition.

174. The method of claim 169, wherein the aggregation inhibitor is added in an aggregation inhibitor to lipid ratio of between about 4:1 and about 0.1:1 by weight.

175. The method of claim 169, wherein the aggregation inhibitor is added in an aggregation inhibitor to lipid ratio of about 1:1 by weight.

176. The method of claim 169, wherein the aggregation inhibitor is added in an amount suitable for modulating the resulting cochleate to the desired size range.

177. The method of claim 169, wherein the aggregation inhibitor is chosen from the group consisting of a protein, a peptide, a polysaccharide, a milk or milk product, a polymer, a gum, a wax, a resin, and combinations thereof.

178. The method of claim 169, wherein the aggregation inhibitor is selected from the group consisting of: casein, κ-casein, milk, albumin, serum albumin, bovine serum albumin, rabbit serum albumin, methylcellulose, ethylcellulose, propylcellulose, hydroxycellulose, hydroxymethyl cellulose, hydroxyethyl

cellulose, hydroxypropyl cellulose, hydroxypropylmethyl cellulose, polyvinyl pyrrolidone, carboxymethyl cellulose, carboxyethyl cellulose, pullulan, polyvinyl alcohol, sodium alginate, polyethylene glycol, polyethylene oxide, xanthan gum, tragacanth gum, guar gum, acacia gum, arabic gum, polyacrylic acid, methylmethacrylate copolymer, carboxyvinyl polymer, amylose, high amylose starch, hydroxypropylated high amylose starch, dextrin, pectin, chitin, chitosan, levan, elsinan, collagen, gelatin, zein, gluten, carrageenan, carnauba wax, shellac, latex polymers, milk protein isolate, soy protein isolate, whey protein isolate, and combinations thereof.

179. The method of claim 169, wherein the plurality of cochleates has a mean diameter of less than about 600 nm.

180. The method of claim 169, wherein the plurality of cochleates has a mean diameter of less than about 500 nm.

181. The method of claim 169, wherein the size distribution of the plurality of cochleates is less than about 700 nm.

182. The method of claim 169, wherein the size distribution of the plurality of cochleates is less than about 550 nm.

183. The method of claim 169, wherein the cargo moiety is at least one member selected from the group consisting of a vitamin, a mineral, a nutrient, a micronutrient, an amino acid, a toxin, a microbicide, a microbistat, a co-factor, an enzyme, a polypeptide, a polypeptide aggregate, a polynucleotide, a lipid, a carbohydrate, a nucleotide, a starch, a pigment, a fatty acid, a monounsaturated fatty acid, a polyunsaturated fatty acid, a flavored essential oil or extract, a hormone, a cytokine, a virus, an organelle, a steroid or other multi-ring structure, a saccharide, a metal, a metabolic poison, an antigen, an imaging agent, a porphyrin, a tetrapyrrolic pigment, and a drug.

184. The method of claim 183, wherein the drug is at least one member selected from the group consisting of a protein, a small peptide, a bioactive polynucleotide, an antibiotic, an antiviral, an anesthetic, antipsychotic, an anti-infectious, an antifungal, an anticancer, an immunosuppressant, an immunostimulant, a steroidal anti-inflammatory, a non-steroidal anti-inflammatory, an antioxidant, an antidepressant which can be synthetically or naturally derived, a substance which supports or enhances mental function or inhibits mental deterioration, an anticonvulsant, an HIV protease inhibitor, a non-nucleophilic reverse transcriptase inhibitor, a cytokine, a tranquilizer, a mucolytic agent, a dilator, a vasoconstrictor, a decongestant, a leukotriene inhibitor, an anti-cholinergic, an anti-histamine, a cholesterol lipid metablolism modulating agent and a vasodilatory agent.

185. The method of claim 184, wherein the drug is at least one member selected from the group consisting of Amphotericin B, acyclovir, adriamycin, carbamazepine, ivermectin, melphalen, nifedipine, indomethacin, curcumin, aspirin, ibuprofen, naproxen, acetaminophen, rofecoxib, diclofenac, ketoprofin, meloxicam, nabumetone, estrogens, testosterones, steroids, phenytoin, ergotamines, cannabinoids, rapamycin, propanadid, propofol, alphadione, echinomycin, miconazole, miconazole nitrate, ketoconazole, itraconazole, fluconazole, griseofulvin, clotrimazole, econazole, terconazole, butoconazole, oxiconazole, sulconazole, saperconazole, voriconazole, ciclopirox olamine, haloprogin, tolnaftate, naftifine, terbinafine hydrochloride, morpholines, flucytosine, natamycin, butenafine, undecylenic acid, Whitefield's ointment, propionic acid, caprylic acid, teniposide, hexamethylmelamine, taxol, taxotere, 18-hydorxydeoxycorticosterone, prednisolone, dexamethazone, cortisone, hydrocortisone, piroxicam, diazepam, verapamil, vancomycin, tobramycin, teicoplanin, bleomycin, peptidolglycan, ristocetin, sialoglycoproteins, orienticin, avaporcin, helevecardin, galacardin, actinoidin, gentamycin, netilmicin, amikacin, kanamycin A, kanamycin B, neomycin, paromomycin, neamine, streptomycin, dihydrostreptomycin, apramycin, ribostamycin, spectinomycin, caspofungin, echinocandin B, aculeacin A, micafungin, anidulafungin, cilofungin, pneumocandin, geldanamycin, nystatin, rifampin, tyrphostin, a glucan synthesis inhibitor, vitamin A acid, mesalamine, risedronate, nitrofurantoin, dantrolene,

etidronate, nicotine, amitriptyline, clomipramine, citalopram, dothepin, doxepin, fluoxetine, imipramine, lofepramine, mirtazapine, nortriptyline, paroxetine, reboxitine, sertraline, trazodone, venlafaxine, dopamine, St. John's wort, phosphatidylserine, phosphatidic acid, amastatin, antipain, bestatin, benzamidine, chymostatin, 3,4-dichloroisocoumarin, elastatinal, leupeptin, pepstatin, 1,10-phenanthroline, phosphoramidon, ethosuximide, ethotoin, felbamate, fosphenytoin, lamotrigine, levitiracetam, mephenytoin, methsuximide, oxcarbazepine, phenobarbital, phensuximide, primidone, topirimate, trimethadione, zonisamide, saquinavir, ritonavir, indinavir, nelfinavir, and amprenavir.

186. The method of claim 183, wherein the polynucleotide is at least one member selected from the group consisting of a deoxyribonucleic acid (DNA) molecule, a ribonucleic acid (RNA) molecule, small interfering RNA (siRNA), a ribozyme, an antisense molecule, and a plasmid.

187. The method of claim 186, wherein the DNA is transcribed to yield a ribonucleic acid.

188. The method of claim 187, wherein the ribonucleic acid is translated to yield a biologically active polypeptide.

189. The method of claim 183, wherein the polypeptide is at least one member selected from the group consisting of cyclosporin, Angiotensin I, II, or III, enkephalins and their analogs, ACTH, anti-inflammatory peptides I, II, or III, bradykinin, calcitonin, beta-endorphin, dinorphin, leucokinin, leutinizing hormone releasing hormone (LHRH), insulin, neurokinins, somatostatin, substance P, thyroid releasing hormone (TRH), and vasopressin.

190. The method of claim 183, wherein the antigen is at least one member selected from the group consisting of a carbohydrate, envelope glycoproteins from viruses, an animal cell membrane protein, a plant cell membrane protein, a bacterial membrane protein and a parasitic membrane protein.

191. The method of claim 183, wherein the nutrient is at least one member selected from the group consisting of micronutrients, vitamins, minerals, fatty acids, polyunsaturated fatty acids, amino acids, fish oils, fish oil extracts, biotin, choline, inositol, ginkgo, and saccharides.

192. The method of claim 183, wherein the micronutrient is a phytochemical or a zoochemical.

193. The method of claim 183, wherein the micronutrient is at least one member selected from the group consisting of beta-carotene, resveratrol, lutein, zeaxanthine, quercetin, silibinin, perillyl alcohol, genistein, sulfurophane, lycopene, eicosapentanoic acid, gamma-3, omega-3, gamma-6, and omega-6 fatty acids.

194. The method of claim 183, wherein the vitamin is at least one member selected from the group consisting of vitamins A, B, B1, B2, B3, B12, B6, B-complex, C, D, E, and K, and beta-carotene.

195. The method of claim 183, wherein the mineral is at least one member selected from the group consisting of boron, chromium, colloidal minerals, colloidal silver, copper, manganese, potassium, selenium, vanadium, vanadyl sulfate, calcium, magnesium, barium, iron and zinc.

196. The method of claim 183, wherein the fatty acid is at least one member selected from the group consisting of polyunsaturated and saturated fatty acids.

197. The method of claim 183, wherein the saccharide or sweetener is at least one member selected from the group consisting of saccharine, isomalt, maltodextrine, aspartame, glucose, maltose, dextrose, fructose and sucrose.

198. The method of claim 183, wherein the flavor substance is an essential oil or an extract.

199. The method of claim 198, wherein the flavor substance is selected from the group consisting of oils and extracts of cinnamon, vanilla, almond, peppermint, spearmint, chamomile, geranium, ginger, grapefruit, hyssop, lavender, lemon, lemongrass, marjoram, lime, nutmeg, orange, rosemary, sage, rose, thyme, anise, basil, and black pepper.

200. The method of claim 198, wherein the extracts are from at least one member selected from the group consisting of an herb, a citrus, a spice and a seed.

201. A kit for the manufacture of a cochleates, comprising:
an aggregation inhibitor; and
an instruction for formation of cochleates with the aggregation inhibitor.

202. The kit of claim 201, comprising at least one component selected from the group consisting of: a lipid, a phospholipid, a cation, a cargo moiety, and a solvent.